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CHAPTER 5. ACCOUNTING FOR INTERNAL USE SOFTWARE

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05-01 PURPOSE.

The purpose of this guidance is to state NOAA's policy for determining and recording the value of internal use software. The policy is consistent with the current Statement of Federal Financial Accounting Standards (SFFAS) No. 10, Accounting for Internal Use Software. It provides the NOAA criteria to determine the cost of internal use software and whether it should be capitalized and recorded in NOAA's property records as an asset or charged as an expense.

05-02 AUTHORITY.

1. Statement of Federal Financial Accounting Standards No. 10, Accounting for Internal Use Software (<http://www.fasab.gov/pdffiles/fasab10.pdf>).
2. U. S. Department of Commerce, Accounting Principles and Standards Handbook, Chapter 8, Assets (<http://www.osec.doc.gov/ofm/acctg/chptr8.pdf>).

05-03 SCOPE.

This policy establishes NOAA's standards for determining the value of software developed or obtained for internal use, and whether it should be capitalized or expensed. The policy is effective for reporting periods that begin after September 30, 2000, starting with Fiscal Year 2001. A purchase or new software development project that begins on or after October 1, 2000, is fully subject to this policy. Software development projects that began before October 1, 2000, are not subject to this policy for costs incurred before that date. For projects already started, costs incurred on or after October 1, 2000, are subject to this policy and must be used to determine the value of the software.

05-04 APPLICABILITY.

The policy applies to software used to perform NOAA's missions and includes both programmatic and administrative software. It requires that internal use software be capitalized when the cost to acquire or develop the software is \$200,000 or greater and has an expected useful life of 2 or more years. Costs to acquire or develop research and development software are not covered by this policy.

1. For developed software, this policy only applies to costs incurred in the development phase which is between the time that a decision is made to proceed with the project and the time at which final software testing and acceptance is completed. Costs incurred after acceptance testing are also not included.
2. This policy applies to software enhancements that are initiated to provide significant additional capability. Costs incurred to do corrective, adaptive, or perfective maintenance (see Glossary) are not enhancements and are not covered by this policy. A software enhancement providing a significant additional capability is typically characterized as having a documented project plan, establishing a development schedule, and a designated project manager.

05-05 GENERAL GUIDELINES.

The Flowchart/ Decision Tree at Exhibit 2 should be used by a program manager to determine whether this policy is applicable and costs associated with the acquisition, development, or enhancement of software must be tracked so that the software can be recorded as a capital asset. Additional details needed to use the flowchart are in the sections below and in the Glossary.

05-06 POLICY REQUIREMENTS.

1. Useful Life of Capitalized Software

Capitalized software will be considered to have a useful life of 5 years unless justification is provided to the Property Office for assigning a lesser or greater useful life. All conversion costs

should be expensed as incurred, including the cost to develop or obtain software that allows for access or conversion of existing data to new software.

2. Capitalization of Commercial Off The Shelf (COTS) Software:

The cost of COTS software recorded in NOAA's Property System must include the amount paid to the vendor for the software. If the cost of extra services, such as training, are included with the acquisition, these costs should be excluded. COTS software requiring material internal cost to implement or make it ready for use will be considered developed software, and all direct and indirect costs, including staff time, contract labor, supplies, materials (including software), rent, benefits, etc., incurred to develop the software, must be tracked in construction-work-in-progress (CWIP). See section on CWIP below.

Cost of enhancements to existing internal use software (and modules) should be capitalized when it is more likely than not that they will result in significant additional capabilities. The cost of minor enhancements (i.e. less than \$200,000) resulting from ongoing systems maintenance should be expensed in the period incurred.

05-07 RESEARCH AND DEVELOPMENT (R & D) SOFTWARE.

R & D software is expensed. The development of R & D software may involve testing that software in practical, operational situations as part of the R & D process, but this testing does not, by itself, imply future operational use.

However, if the decision is subsequently made to convert the R & D software to operational use, then this policy is applicable and the costs incurred to convert the software for operational use must be tracked to determine the value of the software.

R & D software does not include software used to manage, account for, or report on R & D projects. Such software serves an administrative function and is subject to the definitions and requirements of the internal use software capitalization policy.

05-08 CONSTRUCTION-WORK-IN-PROGRESS (CWIP).

Any developed software, including enhancements, which will be capitalized, must follow the CWIP policy and procedures. These include:

- identification of a CWIP Project Manager;
- establishment of a unique CWIP project code for internally developed software;
- inclusion of the project and pertinent information on the CWIP project list;
- maintenance of a CWIP file with documentation on all costs which will be capitalized;

- monthly review of the obligation document with CWIP CA500D report and preparation of reconciliations;
- quarterly submission to the Finance Office of the reconciliation of the CWIP CA500D report to the obligation documents; and
- submission of the proper documentation to Personal Property Office to permit recording of the capitalized software upon completion of the CWIP phase.

To assist the Personal Property Office in their review, the CD 435, Procurement Request, that is prepared to cover the pre-capitalization phases of the development should use a CWIP task code for the accounting, and identify the scope of the work as requirements analysis, feasibility analysis, and preliminary design. If the scope of a contract covers both the pre-capitalization and capitalization phases, then the CD 435 should differentiate between the two phases, and show non-CWIP accounting for the first phase and CWIP accounting for the second phase. The contract should include a specific milestone(s) to provide the changeover point to the use of the CWIP accounting.

Complete CWIP policy and procedures can be found on the internet at:

<http://www.corporateservices.noaa.gov/~finance/CWIP.html>.

05-09 INCOMPLETE DEVELOPMENT.

In instances when managers conclude that software under development will not be completed, this fact must be conveyed to the Finance Office so that the related book value accumulated for the software or the balance in a CWIP account, if applicable, may be reduced to reflect the expected net realizable value, if any, and the loss recognized.

05-10 IMPAIRED SOFTWARE.

Capitalized software must be recognized as impaired when one of the following occurs:

- the software is no longer expected to provide substantive service; or
- a significant reduction occurs in the capabilities, functions or uses of the software; or a module thereof.

If the impaired capitalized software is to remain in use, the loss due to impairment should be measured as the difference between the book value and either (1) the cost to acquire software that would perform similar remaining functions (i.e., the unimpaired functions) or, if that is not feasible, (2) the portion of book value attributable to the remaining functional elements of the software. The loss should be recognized upon impairment, and the book value of the asset

reduced accordingly. If neither (1) nor (2) above can be determined, the book value should continue to be amortized over the remaining useful life of the software.

If the impaired capitalized software is to be removed from use, the loss due to impairment should be measured as the difference between the book value and the net realizable value (NRV), if any. The loss should be recognized upon impairment, and the book value of the asset reduced accordingly. The NRV, if any, should be transferred to an appropriate asset account until such time as the software is disposed of and the amount is realized.

05-11 RESPONSIBILITIES.

The following NOAA offices have these responsibilities for accounting for internally developed software for which this policy is applicable:

1. Program Office

- Identify internal use software which must be capitalized;
- Identify a CWIP activity manager;
- Submit forms for a unique CWIP project code and CWIP project to the program Budget Office. Forms are accessible at:

<http://www.rdc.noaa.gov/~cams/forms.htm>,

- Maintain CWIP cost documentation file;
- Use a capital asset object classification code when internally developed software is capitalized;
- Ensure that the proper costs are charged to the CWIP task code. Reconciliation of the obligating documents to the CA500D Report should be done monthly;
- Report internal use software that meets the capitalization criteria to the Line/Staff Office, Chief Information Officer (CIO), and the Chief Financial Officer (CFO)/Management and Budget (MB) Chief;
- Assign property identification numbers and affix bar code labels; and
- Consult with the Line and Staff Office/CIO and/or CFO/MB Chiefs to ensure that decisions about the applicability of this policy are properly documented. If there are any further questions, the staff of the Personal Property Office along with the staff of the NOAA CIO will provide guidance.

2. NOAA Line/Staff Office CIOs

- Work with the Program offices in the determination of whether a project should be capitalized to ensure consistency across NOAA.

3. NOAA Budget Office

- Issue CWIP policies and procedures;
- Assign CWIP project codes;
- Maintain a comprehensive list of CWIP projects along with appropriate information; and
- Coordinate CWIP training.

4. Finance Office

- Coordinate revisions of internal use software policy; and
- Record capitalized software in the general ledger.

5. Personal Property Office

- Enter and track the software in the Sunflower personal property system.

05-12 OTHER REFERENCES.

1. Statement of Federal Financial Accounting Standards NO. 10, Accounting for Internal Use Software

<http://www.fasab.gov/pdffiles/fasab10.pdf#search='fasab'>

This site contains the FASAB statements plus a section in each statement that covers the basis for the FASAB conclusions.

2. Personal Property web page

<http://www.pps.noaa.gov>

This page can be accessed from the NOAA Home Page. It contains greater details on “bulk purchases” and accountable property.

3. Certified Public Accountants Journal on the internet

<http://www.nysscpa.org/cpajournal/1997/0297/features/f16.htm>

This site contains an article with a sample decision table for accounting for internal use software, examples of software applications for internal use and examples of software applications not for internal use.

05-13 GLOSSARY.

Accountable Personal Property: software personal property which costs more than \$25,000 with a life expectancy of more than 1 year. (See Personal Property web page for more detail.)

Bulk Purchase: acquisition of a quantity of identical items (i.e., items should be the same model though not necessarily the same color) individually costing \$25,000 or more and less than \$200,000 where the total monetary value of the one-time acquisition of those items is \$1 million or more. (See the Personal Property web page for more detail.)

Capital Asset: Capital assets are reported on the annual financial statements. Capital assets include: plant (buildings), property (including software) or equipment (PPE) which has as an aggregate acquisition (or production) cost of \$200,000 or more (also see bulk purchase); has an estimated service life of 2 years or more; and is not intended for sale in the ordinary course of operations.

Commercial off-the-shelf (COTS) software: software that is purchased from a vendor and is ready for use with little or no changes.

Construction-Work-In-Progress (CWIP): costs which are being incurred in the ongoing acquisition/production/construction of an asset are recorded in a temporary asset account called Construction-Work-In-Progress. CWIP is reported on the financial statements to more accurately reflect the assets of NOAA. Costs of completed projects are moved from CWIP to the proper asset account.

Data conversion costs: All data conversion costs incurred for internally developed, contractor developed, or COTS software should be expensed as incurred, including the cost to develop or obtain software that allows for access or conversion of existing data to the new software. Such cost may include the purging or cleansing of existing data, reconciliation or balancing of data, and the creation of new/additional data.

Developed software:

- (1) Internally Developed - software that employees of the entity are actively developing, including new software and existing or purchased software that is being modified with or without a contractor's assistance.

- (2) **Contractor Developed** - software that a federal entity is paying a contractor to design, program, install, and implement, including new software and the modification of existing or purchased software without substantive employee involvement beyond contract monitoring.

Expense: operating expenditures which provide benefits that do not extend beyond the present fiscal year.

External-use software: software developed for use by another agency or outside entity.

Internal-use software: software purchased from commercial vendors “off-the-shelf,” internally developed, or contractor developed, solely to meet the entity’s internal or operational needs.

Research and Development Software: software that is acquired or developed to support the conduct of the agency’s research mission, e.g., to test theoretical models, to monitor and understand the environment, or to track any species of animal or plants as part of on-going research.

Software: software includes the application and operating system programs, procedures, rules, and any associated documentation pertaining to the operation of a computer system.

Software Development Phases: generally, a federal entity goes through three phases when developing software. These phases are: preliminary design, software development, and post-implementation/operation.

Software Maintenance: there are three types of maintenance described below which incur costs that are not capitalized.

- (1) **Corrective maintenance** refers to changes necessitated by actual errors (induced or residual bugs) in a system. Corrective maintenance consists of activities normally considered to be error correction required to keep the system operational. All corrective maintenance is related to the system not performing as originally intended.
- (2) **Adaptive maintenance** consists of any effort which is initiated as a result of changes in the environment in which a software system must operate. These environmental changes are normally beyond the control of the software maintainer and consist primarily of changes to: (1) rules, laws and regulations that affect the system; (2) hardware configurations, e.g., distributed processors, local printers, etc.; (3) data formats, file structures; and (4) system software, e.g., operating systems, compilers, utilities, etc.
- (3) **Perfective maintenance** includes all changes, insertions, deletions, modifications, extensions, and enhancements which are made to a system to meet

the evolving and/or expanding needs of the user. Perfective maintenance refers to enhancements made to improve software performance, maintainability, or understandability. It is generally performed as a result of new or changing requirements, or in an attempt to augment or fine tune the software. Activities designed to make the code easier to understand and to work with, such as restructuring or documentation updates (often referred to as 'preventive' maintenance) and optimization of code to make it run faster or use storage more efficiently are also included in the perfective category.

Useful Life: the normal operating life of an asset in terms of utility to the owner.

EXHIBIT 5-1

Federal Accounting Standards Advisory Board
Statement of Accounting Standards #10
Accounting for Internal Use Software

Software Development Phases

There are no federal requirements regarding the phases that each software project must follow. The life-cycle phases of a software application described here are compatible with and generally reflect those in the Office of Management and Budget's (OMB) Circular A-130, *Management of Federal Information Resources*; the General Accounting Office's (GAO), *Measuring Performance and Demonstrating Results of Information Technology Investments* (GAO/AIMD-98-89, Mar. 1998); and the American Institute of CPA's Statement of Position No. 98-1, *Accounting for the Costs of Computer Software Development or Obtained for Internal Use* (Mar. 4, 1998).

Software's life-cycle phases include planning, development, and operations. This standard provides a framework for identifying software development phases and processes to help isolate the capitalization period for internal use software that the federal entity is developing.

The following table illustrates the various software phases and related processes. The steps within each phase of internal use software development may not follow the exact order shown below. This standard should be applied on the basis of the nature of the cost incurred, not the exact sequence of the work with each phase.

Preliminary design phase	Software development phase	Post Implementation/operational phase
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Conceptual formulation of alternatives ³	Design of chosen path, including software configuration and software interfaces ⁴	Data conversion
Evaluation and testing of alternatives		Application maintenance
Determination of existence of needed technology	Coding	
Final selection of alternatives	Installation to hardware	
	Testing, including parallel processing phase	

1. In the preliminary design phase, federal entities will likely do the following:

- a. Make strategic decisions to allocate resources between alternative projects at a given time. For example, should programmers develop new software or direct their efforts toward correcting problems in existing software?
- b. Determine performance requirements (i.e., what it is that they need the software to do).
- c. Invite vendors to perform demonstrations of how their software will fulfil a federal entity's needs.
- d. Explore alternative means of achieving specified performance requirements. For example, should a federal entity make or buy the software? Should the software run on a mainframe or a client server system?
- e. Determine that the technology needed to achieve performance requirements exists.
- f. Select a vendor if a federal entity chooses to obtain COTS software.
- g. Select a consultant to assist in the software's development or installation.

2. In the software development phase, federal entities will likely do the following:

- a. Use a system to manage the project.

- b. Track and accumulate life-cycle cost and compare it with performance indicators.
 - c. Determine the reasons for any deviations from the performance plan and take corrective action.
 - d. Test the deliverables to verify that they meet the specifications.
3. In the *post-implementation/operational phase*, federal entities will likely do the following:
- a. Operate the software, undertake preventive maintenance, and provide ongoing training for users.
 - b. Convert data from the old to the new system.
 - c. Undertake post-implementation review comparing asset usage with the original plan.
 - d. Track and accumulate life-cycle cost and compare it with the original plan.

Note:

See OMB Circular A-11, *Preparation, Submission and Execution of the Budget (revised 11/02/2005)*, Part 7, *Planning, Budgeting, Acquisitions, and Management of Capital Assets*.

Flowchart / Decision Tree for the Capitalization of Software

Final Draft

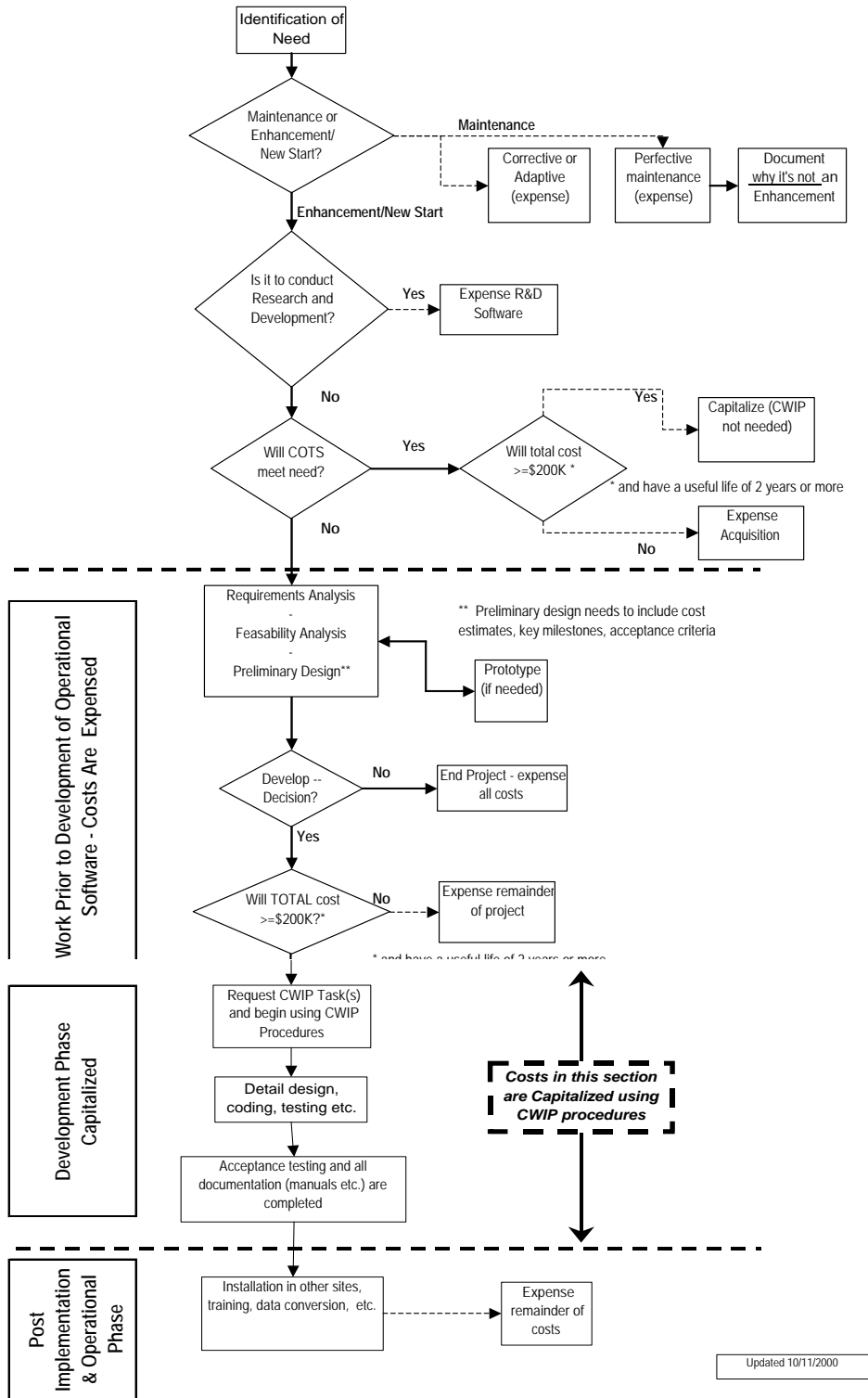


Figure 1

EXHIBIT 5-2

Capitalization of Developed Software:

Only the costs of the software development phase will be capitalized [accumulated in a CWIP task for subsequent capitalization]. See Statement of Federal Financial Accounting Standards No. 10, Accounting for Internal Use Software, Software Development Phases (Attachment 1, page 13) for further details.

Software development is considered complete and costs are no longer accumulated for capitalization when the software passes acceptance testing.

All developed software which will be capitalized must follow the CWIP procedures (see section on CWIP below).

Contractor Developed Software

The cost of contractor developed software is the amount paid to a contractor to design, program, install, and implement the software. It should also include any material internal cost incurred by NOAA to implement the software or otherwise make it ready for use and the cost of donated resources. The cost excludes NOAA planning and operational costs.

Internally Developed Software

The cost of internally-developed software is the full cost (both direct and indirect costs) incurred during the software development phase. The direct and indirect (object class code 98XX) costs include salaries of programmers, systems analysts, project managers and administrative personnel, associated employee benefits, outside consultants' fees, rent, supplies, and documentation manuals. Costs of staff that devote a significant portion of their time, defined as exceeding 500 hours, must be captured and capitalized. This may include programming, management or significant review.

Capitalization of Separate Modules:

Capitalization standards may be applied to the total cost of the software or, when appropriate, to individual components or modules. For example, if software consists of more than one component or module, and one module is implemented more than 6 months before another, the modules will be accounted for and tracked separately, and these policies and procedures will apply to the individual modules rather than the entire software package.

For each module or component of a software project, the acceptance date will be the date when that module or component has been tested successfully. If the use of a module is dependent on completion of another module(s) the acceptance date will be the date when both that module and the other module(s) have successfully completed testing.

EXHIBIT 5-2

Costs Not Capitalized (Expensed):

Costs treated as an expense include those incurred:

- before management authorizes and commits to a computer software project, such as completion of requirements development, feasibility assessment, conceptual formulation, preliminary design and prototyping, and testing of possible alternatives;
- after the acceptance of the software (with full documentation);
- to perform data conversion, including the purging or cleansing of existing data, reconciliation or balancing of data, and the creation of new/additional data;
- to conduct training;
- to install operational systems, (if acceptance testing is done on one operational system the installation on other identical systems is an expense); and
- to purchase enhanced versions of software for a nominal charge.

EXHIBIT 5-3

POINTS OF CONTACT

If you need guidance in determining if software development projects or enhancements should be capitalized contact: Robert Swisher in the Office of the Chief Information Office, Planning, Policy and Analysis Office at (301)713-3555 ext 210.

If you need guidance on establishing a CWIP project or identifying costs which should be in CWIP, the Line/Staff Office Budget Analyst should contact their Headquarters Budget Analyst for assistance.

If you need assistance in recording internal use software in the personal property system: contact Brian Mason in the Acquisition and Facilities Office at (301) 413-3520.

If you have questions on the policy for internal use software: contact Frank Greci at (301) 444-2110 or Nancy Gates at (301) 444-2185.